CLAIMS

What is claimed is:

1. A method of reducing memory requirements by de-interleaving audio information using static and dynamic buffers, the method comprising:

writing interleaved first audio channel information to a first static memory device;

de-interleaving the first audio channel information;

writing de-interleaved first audio channel information to a second static memory device;

writing de-interleaved first audio channel information to a dynamic memory device from the second static memory device;

overwriting interleaved first audio channel information with interleaved second audio channel information in the first static memory device;

de-interleaving second audio channel information;

writing de-interleaved second audio channel information to the second static memory device;

overwriting interleaved second audio channel information in the first static memory with de-interleaved first audio channel information from the dynamic memory device; and

decoding the first and second audio channel information.

2. The method according to claim 1, wherein the first audio channel information and the second audio channel information comprise similar audio information from adjacent sub-frames.

3. The method according to claim 2, wherein similar audio information comprises audio information corresponding to a particular range of audio frequencies.

4. The method according to claim 3, further comprising maintaining audio quality of transmitted audio information by receiving audio information in an interleaved state.

5. A system for de-interleaving audio information with static and dynamic buffers, the method comprising:

a first static memory device;

a de-interleaving engine;

a second static memory device;

a dynamic memory device; and

an audio decoder, whereby interleaved first audio channel information is written into the first static memory device, de-interleaved by the de-interleaving engine, written into the second static memory device, and temporarily stored in the dynamic memory device.

6. The method according to claim 5, wherein the interleaved first audio channel information is overwritten in the first static memory device by interleaved second audio channel information, the interleaved second audio channel information is de-interleaved by the de-interleaving engine, and the de-interleaved second audio channel information is written to the second static memory device.

7. The system according to claim 6, wherein the interleaved second audio channel information in the first static memory device is overwritten by the de-interleaved

first audio channel information from the dynamic memory device.

8.   The system according to claim 7, wherein the de-interleaved first and second audio channel information is decoded by the audio decoder.

9.   The system according to claim 5, wherein interleaved audio information comprises similar audio information from adjacent sub-frames being associated in adjacent sub-bands.

10. The system according to claim 5, wherein similar audio information comprises audio information corresponding to a particular range of audio frequencies.

11. The system according to claim 5, wherein audio quality of transmitted audio information is maintained by receiving audio information in an interleaved state.

12. An application specific integrated circuit for de-interleaving audio information, the circuit comprising:

a first static memory device operatively connected to a de-interleaving engine;

a second static memory device also operatively connected to the de-interleaving engine;

a dynamic memory device operatively connected to the first and second static memory devices; and

an audio decoder operatively connected to the first and second static memory devices and the dynamic memory device, whereby interleaved first audio channel information is written into the first static memory device, de-interleaved by the de-interleaving engine,

written into the second static memory device, and temporarily stored in the dynamic memory device.

13. The circuit according to claim 12, wherein the interleaved first audio channel information is overwritten in the first static memory device by interleaved second audio channel information, the interleaved second audio channel information is de-interleaved by the de-interleaving engine, the de-interleaved second audio channel information is written to the second static memory device.

14. The circuit according to claim 13, wherein the interleaved second audio channel information in the first static memory device is overwritten by the de-interleaved first audio channel information from the dynamic memory device.

15. The circuit according to claim 14, wherein the de-interleaved first and second audio channel information is decoded by the audio decoder.

16. The circuit according to claim 12, wherein interleaved audio information comprises similar audio information from adjacent sub-frames being associated in adjacent sub-bands.

17. The circuit according to claim 12, wherein similar audio information comprises audio information corresponding to a particular range of audio frequencies.

18. The circuit according to claim 12, wherein audio quality of transmitted audio information is maintained by receiving audio information in an interleaved state.